

PIRT Summary to the 2000 Legislature

Pesticide Incident Reporting and Tracking Review Panel

Report on 1998 Incident Data



Environmental Health Programs
December 1999

Pesticide Incident Reporting and Tracking (PIRT) Review Panel

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A report prepared by the **Department of Health** to the legislature as required by Chapter 380, Laws of 1989, and RCW 70.104.



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Introduction

The Pesticide Incident Reporting and Tracking Review Panel has summarized the data from 1998 reported pesticide incidents into a summary to the 2000 Legislature. A more detailed annual report will be available in the spring of 2000. The PIRT Panel consists of the Washington State Departments of Agriculture (WSDA), Ecology, Health (DOH), Labor and Industries (L&I), Natural Resources (DNR), Fish and Wildlife (WDFW), as well as the University of Washington (UW), Washington State University (WSU), Washington Poison Center (WPC), a practicing toxicologist, and a member of the public.

The PIRT Panel is directed by statute (RCW 70:104.090) and has among its responsibilities the identification of inadequacies in pesticide regulations that result in insufficient protection of public health and also the approval of an annual report summarizing pesticide incidents. This report evaluates 1998 pesticide incident data from four state agencies: Agriculture, Ecology, Health, and Labor and Industries, and the Washington Poison Center. It also describes PIRT 1999 panel activities.

1999 Actions of the PIRT Panel

In 1999, the PIRT Panel addressed recommendations made in the 1998 PIRT Annual Report. These activities are outlined below. Note that some items carried over into the following year because of the complexity of the issue addressed and are therefore listed in the section of the 2000 recommendations.

- *Recommendation:* Further develop the PIRT Panel goals and tasks.

Action: The panel refined the Mission Statement and updated goals and tasks:

Mission Statement:

The mission of the PIRT Panel is to monitor the activities of the state agencies responsible for pesticide regulation, to ensure timely response and adequate monitoring of pesticide use, protection of workers, the public and the environment from the effects of pesticide use and misuse.

Goals:

1. To reduce the risk from pesticide exposure to human health and the environment.
2. To reduce the overall incidence and severity of human pesticide exposures through timely incident investigation, education, and development of public health protection strategies for workers, and the public.
3. To ensure that appropriate legislation, rules, and guidelines are in place to provide adequate public health and environmental protection from pesticide use and misuse.
4. To ensure adequate reporting of health related or environmental incidents involving pesticides.
5. To provide the Governor, agency heads, the legislature, and the public with an annual report of PIRT activities and summary of agency pesticide incident investigations.

Tasks:

1. To review pesticide incidents of unusual complexity or those that cannot be resolved, as requested by the chair or any panel member.
2. To monitor the time periods required for response to reports of pesticide complaints or incidents as recorded by the Departments of Agriculture, Ecology, Health, and Labor and Industries.
3. To establish guidelines for centralizing the receipt of information relating to actual or alleged health and environmental incidents involving pesticides.
4. To review agency procedures for investigation of pesticide incidents and make recommendations for implementation by the appropriate agency.
5. To review and approve an annual report prepared by the Department of Health.

- *Recommendation:* Prepare a five year (1993 through 1997) analysis of PIRT incident data.

Action: The panel identified issues to be explored from the incident data submitted to PIRT by WSDA, DOH and L&I. The analysis will be carried over as a recommendation for 2000 and will be designed to identify trends for intervention strategies by the agencies.

- Recommendation: L&I conduct a database search for additional pesticide claims to verify occupational case ascertainment based on a comparison of ICD-9 (international Classification of Diseases 9th Revision) diagnoses and Z-16 (USA Standard Injury) codes to cases received through the present system.
Action: Currently pesticide claims are identified through computer scanning for specific words: words that end in “icide”, spray, and/or fumigate. In November 1999 L&I reported that 17 additional claims were found by searching the ICD-9 codes (assigned by the physician at the clinic or hospital) and by Z-16 codes (determined by L&I) pertaining to pesticide illness. This additional search method will be done routinely by L&I and results will be forwarded to DOH for additional investigation.
- Recommendation: Review PIRT data for pesticide active ingredients involved in incidents.
Action: The panel suggested DOH review the incident data for selected active ingredients with particular attention to the formulations involved in the pesticide product.
- Recommendation: Review a sample of pesticide labels involved in incidents to determine if instructions were adequate to have prevented the accident (misuse notwithstanding).
Action: The panel asked the agencies in 2000 to review pesticide incidents involving office buildings and commercial establishments (1995-1998) and applicable labels. Based on the results of this review other sub groups involved in pesticide incidents may be reviewed. The intent of this review is to identify how the label might have been involved in each incident. If review determines label-related factors may be involved, the panel will share such information with the EPA with recommendations for possible label changes.
- Recommendation: Establish networking capability with other states having panels with similar missions or with similar reporting systems.
Action: Only one state (Oregon) has a panel similar to PIRT. Contact was made with this body to share reports and other information. In 1999, DOH briefed the panel on the extensive networking among other state and federal agencies. This will be summarized in the 1999 Annual Report.
- Recommendation: Review current pesticide monitoring efforts in urban surface waters.
Action: The panel heard presentations from Ecology, the National Marine Fisheries Service, United States Geological Survey (USGS) and the King County Hazardous Waste Management Program on current pesticide monitoring activities. Information was distributed to panel members and interested parties.
- Recommendations: Define PIRT’s role in reducing the risk of pesticide exposure in the urban environment.
Action: The panel decided to identify agency involvement in urban pesticide issues and then to determine if the panel should recommend further action to reduce the risk of exposure.

2000 Recommendations

- Prepare an analysis of incident data from 1994 through 1998.

The agencies will provide the panel with summaries of the 1994-1998 incident data evaluated to address issues raised by the panel in 1999. Based on review of these data PIRT will identify opportunities for intervention by the agencies.

- Recommend intervention strategies including education to the agencies, using the analysis of incident data.
- Review PIRT data for pesticide active ingredients involved in incidents.

In 2000 DOH will obtain additional information on incidents involving selected pesticide products.

- Review a sample of pesticide labels involved in incidents to determine if instructions were adequate to have prevented the accident (misuse notwithstanding).

In 1999, the panel directed the agencies to review a sub group of incidents (1994-1998) involving commercial offices. The intent of this review is to identify whether the label instructions were followed and adequate. Based on the findings of this review other incidents may be reviewed. The PIRT panel will provide the EPA with this information.

- Prepare revisions to RCW 70.104.070-090 to more accurately address pesticide issues of concern to the public, and to reflect activities of the PIRT panel.
- Identify agency involvement in urban pesticide issues and determine if the panel should recommend further action to reduce the risk of exposure.

Key Findings

In 1998, approximately half of the cases reviewed by DOH were found to be related to pesticide exposure. Similarly with WSDA, about half of the complaints resulted in some form of corrective action.

Consistent with prior years, agricultural tree fruit workers are the occupational group most frequently involved in pesticide incidents.

Drift complaints continue to comprise a majority of WSDA investigations. Although many turn out to be unrelated to pesticides, several incidents in 1998 involved human exposures that resulted in medical care. DOH found that five of the ten most severe reported cases resulted from agricultural worker drift incidents. These cases re-affirm the need for applicators and employers to consistently ensure that people are not present in areas near pesticide application. Complaints about possible human exposure to pesticides also reflect the public's concern about pesticide use. In general, the majority of complaint investigations are not about major incidents but low level exposures that result in temporary minor health effects or minor plant damage. Pesticide related calls to the Washington Poison Center remain relatively constant, and evidence of serious acute health consequences is remarkably low.

Department Of Agriculture

The Washington State Department of Agriculture (WSDA) investigated all reported complaints involving pesticide use, sales, distribution, pesticide licensing, and building structure inspections for Wood Destroying Organisms. During 1998, WSDA investigated 204 complaints (Table 1). After investigation, 158 involved pesticide applications and 46 were complaints unrelated to pesticides.

Table 1 WSDA Complaints and Violations

Year	Total Complaints	Violations
1992	558	264 (47%)
1993	400	166 (42%)
1994	383	138 (36%)
1995	259	87 (34%)
1996	251	104 (41%)
1997	204	110 (54%)
1998	204	116 (57%)

Eighty-eight percent of all complaints were responded to within 24 hours. WSDA is required to respond to cases of human exposure within 24 hours of receipt. Other cases are responded to as soon as resources allow, generally within 2-3 days.

Location

One hundred forty eight (73%) of the 1998 complaints occurred in eastern Washington; 56 (27%) were from western Washington. The following counties reported 10 or more

complaints: Yakima 28, Grant 26, Spokane 20, King 14, Benton 13, Chelan 10, Okanogan 10, and Whitman 10.

Type of Activity Involved in Complaint

Table 2 (page 5) shows the type of activity for complaints resulting in violations from 1992 to 1998. In 1998, while the number of violation cases increased from 1997, fewer involved Pest Control Operators (PCOs) and Wood Destroying Organisms (WDOs) investigations.

Table 2 1992-1998 WSDA Violations by Type of Activity

Activity	1992	1993	1994	1995	1996	1997	1998
Agricultural	158	75	46	26	29	40	54
Commercial/Industrial	32	60	44	24	27	22	22
PCO/WDO*	*	*	28	28	20	24	8
Residential (non commercial)	9	15	12	3	9	8	7
Right-of Way**	**	**	**	**	3	10	12
Other (licenses, records, etc.)	65	16	8	6	16	6	13
Total Violations	264	166	138	87	104	110	116
* Prior to 1994, PCO cases were classified as other, and in 1996, Wood Destroying Organisms were included with Pest Control Operators.							
** Prior to 1996, right-of-ways were included with commercial/industrial.							

Nature of Pesticide Complaint

Table 3 shows the nature of initial complaints reported in 1998.

Table 3 WSDA 1998 Type of Complaint

Drift	62
Human Exposure	52
Misuse	19
Sales	3
Direct	13
Bee Kill	12
License	12
WDO Inspections	10
Bird/Animal Deaths	7
Water Contamination	4
Notification	4
Contaminated Tanks	3
Disposal	2
Stolen Exam	1
Total	204

When violations are evaluated by type of license involved, commercial applicators accounted for 51 of the 116 violations, followed by private applicators 30, public operators 11,

unlicensed 16, and other 8. This is consistent with prior years.

For the third year (1998), the majority (80%) of all WSDA complaints were determined to have a low severity rating scale of two or less. A rating of two means: residues may have been found but no human or animal symptoms resulted or could be verified; multiple minor violations may have been identified; off label use; worker protection violations; plants with temporary or superficial damage; PCO/WDO faulty inspections; or DOH classified the complaint as "possible". Although there may have been violations associated with these investigations, individuals were generally given Notices of Correction or Verbal Warnings rather than fines or suspended licenses.

In 1998, herbicides were involved in 92 complaints and insecticides in 71 complaints. Other products such as fungicides, disinfectants and

rodenticides were involved less frequently. Many cases involve tank mixes of several products and therefore the total number of products used exceeds the cases investigated.

The following pesticide active ingredients were involved with ten or more separate complaints: 2,4-D (28), glyphosate (17), and azinphos-methyl (10).

The following examples of cases illustrate the continued need for the employer and the applicator to always be sure that no one is present or working near applications:

WSDA 15G-98 / DOH 980176

Ten female orchard workers were drifted on by an aerial application of insecticide to an adjacent potato field. All were taken to the local emergency room and treated for health complaints. The aerial applicator apparently turned over the orchard but testimony varies on the actual application path and amount released. Analytical results for pesticide residues were positive. Final case results are pending.

WSDA 14C – 98/ DOH 980268

Seven of seventeen workers thinning apples reported mild symptoms from a ground application of insecticides to an adjacent orchard block. Two individuals were admitted to the hospital for observation. Clothing samples from the workers and plant samples from

claimants work area were positive for residues. Actual source of the pesticides is not definitive. Final Case results are pending.

Department of Ecology

The Department of Ecology (Ecology) investigates complaints involving threats to air, water or soil. In 1998, Ecology reported 74 pesticide-related complaints. Sixty-six came through the agency's "Emergency Report Tracking System," (ERTs) managed by the Emergency Planning, Preparedness and Response Program, and 8 were reported through the Toxic Cleanup Program's Contaminated Sites database.

Complaints were reported from 21 of the State's 39 counties: 10 from western Washington, 11 from eastern Washington. Of the 74 total cases, 45 were in western Washington, 29 were in eastern Washington.

Of the 66 pesticide related complaints reported through the Emergency Report Tracking System, 11 triggered a field response and/or an investigation, 15 were referred to other state or local agencies, 18 were resolved with a telephone call, and 22 complaints lacked enough information for follow-up. Although there is no indication that any of these complaints involved serious or direct exposure to human health or the environment, it is possible that some of

those that were referred to other agencies could have had potential human or environmental risks. In 1998, eight sites involving pesticide contamination were added to the register of contaminated sites, four will be evaluated through the 'site hazard assessment' process and four are being evaluated through the 'risk assessment' process. These sites concern contamination of: groundwater (3), drinking water (2), soil (2) and sediments (1).

Department of Health

In 1998, DOH investigated 391 reported incidents of suspected acute pesticide related illness involving 476 individuals (cases). This is a slight increase over 1997. Figure 1 shows a comparison of data for the years 1993 -1998.

**Reported Incidents and Cases
1993-1998**

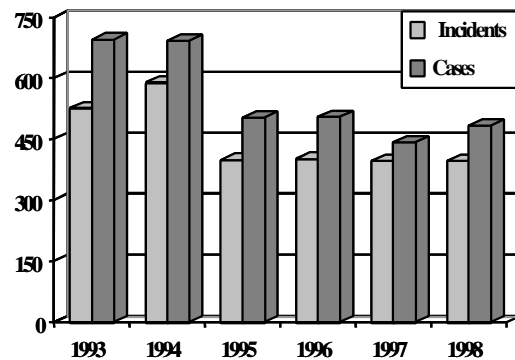


Figure 1

Reports of suspected pesticide illness were received from L & I claims 49%, WPC 33%, WSDA 9%, individuals 3%, Health Care Providers 4%, and others 2%. DOH responded within 48 hours to reported illnesses 95 percent of the time. Most (81%) of reported pesticide illnesses occurred between April and September.

Classification of Investigated Cases

DOH interviewed individuals and witnesses (when appropriate), obtained pesticide application and relevant medical records, and conducted field visits. The case is classified as to how likely the symptoms were related to the exposure. DOH classified 214 (45%) cases investigated to be definitely, probably, or possibly related to pesticide exposure.

Nature of Pesticide Exposure

Of the 214 cases related to pesticide exposure, 111 were associated with non agricultural applications (Figure 2, page 7). Ninety-three cases involved agricultural pesticide applications. Eight cases did not involve an application, (e.g. inadvertent ingestion by children, exposures at pesticide retail and wholesale sites, and intentional ingestion).

1998 DOH Cases by Nature of Pesticide Exposure

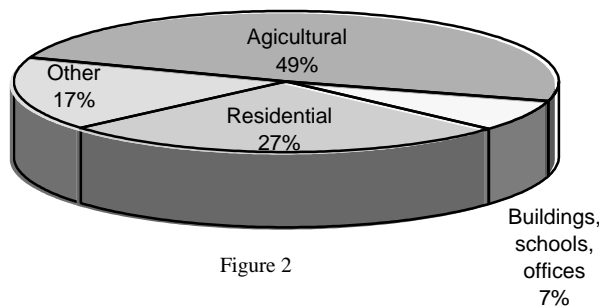


Figure 2

Severity

In 1995, DOH began coding cases according to the severity of health outcome. For the fourth year (1998), the majority (98%) of investigated cases were considered to have mild or moderate medical outcomes, had no symptoms or were unrelated to pesticide exposure. Only three percent (12) of cases investigated had outcomes considered severe. Following investigation, ten of these cases were determined to be pesticide related.

The two cases with the greatest severity are described below.

DOH 980176 (Described on page 5)

DOH 980373 A 33 year old male with history of asthma developed severe symptoms after entering his apartment recently treated with three "miniature cans" of flea spray. The rooms had been aired for over 8 hours. He was

treated and admitted to the hospital for 24 hrs.

Occupational Cases of Pesticide Related Illness

Of the 476 total cases, 319 (67%) involved an alleged pesticide exposure on-the-job. Of these, 144 cases were classified as definite, probable or possible. Eighty-nine involved agricultural workers and 55 were from other occupations. This is approximately a 12% increase in agricultural workers over the prior two years.

Among agricultural workers, those who directly handled pesticides (e.g., mixers, loaders, applicators) are at highest risk for direct exposure and accounted for 31 (34%) of reported illnesses in 1998. Pesticide drift onto agricultural workers accounted for 36 cases (40%) of the pesticide related illnesses. The remaining 23 (26%) were thinners, irrigators, and other agricultural workers exposed either to residues on foliage or by accident (e.g. a hose ruptures).

Forty-nine percent of the pesticide related agricultural occupational cases occurred in the fruit tree industry, especially apples. Thirty-three percent of cases involved field crops. The remaining cases (18%) came from categories such as accidents, nurseries/greenhouses, vegetables, and livestock.

Incidents Involving Children

Forty-two individuals 18 years of age and less accounted for nine percent of the 476 reported cases. (This is a decrease from 61 children involved in cases in 1997.) The 42 cases involved 27 different incidents: 31 were non-agricultural and eleven occurred in agriculture. The 42 childhood cases involved the following types of pesticide: (some cases involved more than one type) 38 insecticide/acaricide, 14 herbicides, 4 fungicide (all occurred in agriculture), 2 repellents, and 8 others.

Nineteen of the 42 cases were related (definite, probable or possible) to pesticides (Table 4). Five children were under the age of six. Four were ages 6-10, and ten were ages 11-18. The severity of the 19 pesticide related cases were 16 mild (88%), two moderate (13%) and one severe, described on page 8.

Table 4 1998 Relationship to Exposure for Children <19 Years of Age

Classification	Cases	
Definite	3	7%
Probable	3	7%
Possible	13	31%
Unlikely	6	14%
Unknown	7	17%
Unrelated	3	7%
Asymptomatic	7	17%
Total	42	100%

DOH 980007 An 18 month old male ingested 1-2 ounces of lindane shampoo. He was transported to the hospital and had a seizure shortly after arrival. He was admitted for further observation, remained stable and was discharged the next day.

Nine of the 42 childhood cases occurred on the job, and six of these occurred in agriculture.

Department of Labor and Industries (L&I)

L&I responds to concerns from workers exposed to pesticides through two divisions: the Washington Industrial Safety and Health Act (WISHA) Services Division, and the Insurance Services Division, Claims Administration Program. In 1998 L&I WISHA Services Division conducted 36 investigations involving pesticide handling and use complaints. The Insurance Services Division; Claims Administration Program received 269 claims relating to pesticide illness.

WISHA Investigations

In 1998 WISHA staff performed 36 pesticide related safety and health investigations in the workplace; 25 in eastern Washington and 11 in western Washington. These investigations occurred in both agricultural and nonagricultural environments. Nineteen involved orchards, six in other farms (berries, potatoes), four at other facilities

(grain terminals, pest control activities, road maintenance), four occurred in greenhouses or nurseries and three involved warehouses unloading shipping from overseas. Thirteen were employee or employee representative initiated complaints. Eleven investigations were the result of referrals from within the agency, or from other state agencies; 11 were planned inspections identified through the L&I targeting list and one was a fatality investigation (2 farmworkers died from gun shot wounds in an orchard).

Violations were reported in 30 (18 had monetary penalties) of the 36 investigations. The following violations were most frequently cited: inadequate hazard communication program; inadequate respirator program or fit testing; inadequate eyewash facility; inadequate Personal Protective Equipment (PPE); no spray records; re-entry into treated area before the Restricted Entry Interval (REI) had expired; no accident prevention program; no material safety data sheets; lack of hazardous chemical labeling; no first aid training, kits, or cards; and inadequate record keeping.

L&I Claims Insurance Services Division, Claims Administration Program

The Insurance Services Division, Claims Administration Program, processes worker claims initiated by on-the-job injuries and illnesses including claims

involving pesticides. In addition, these pesticide claims are referred to DOH for further investigation. In 1998, 269 claims were investigated by DOH because of possible health concerns. This compares with 235 investigated in 1997 and 222 in 1996.

In 1998, 203 (76%) claimants were exposed while working in agriculture and 66 (24%) in a non agricultural setting. Sixty-six percent (134) of the claims, involved workers in the fruit industry and twenty two percent (45) in field crops.

In 1998, the majority of initial medical visits were paid, and the claims were determined (Table 5, Page 9) in accordance with the following definitions:

Table 5 Status of Claims Related to Pesticides

Claim Type	1994	1995	1996	1997	1998
Medical Only/ noncompensable	138 57%	134 55%	97 44%	108 46%	155 58%
Time loss/ compensable	12 5%	9 4%	8 4%	14 6%	11 4%
Rejected	66 27%	98 40%	111 50%	101 43%	100 37%
Pending	25 10%	3 1%	2 1%	12 5%	2 1%
Kept on salary	— —	1 —	1 —	— —	1 —
Unknown	— —	— —	3% 1%	— —	— —
Total	241	245	222	235	269

Medical Only/Non-Compensable

Claim: A worker experienced symptoms that he/she believes occurred from exposure on-the-job and seeks medical evaluation.

The physician finds the symptoms related to the exposure and there is objective evidence of injury. Therefore, the claim is allowed and medical evaluation and any follow-up medical care/treatment is paid. The employee misses less than three days of work. These lost work days are not reimbursed to the employee.

Time Loss/Compensable Claim:

A worker has an allowable claim and misses more than three days of work immediately following an exposure on the job. The worker is paid a portion of salary while unable to work. All related medical costs are covered.

Rejected Claims:

Initial diagnostic and evaluation medical costs are covered but the claim is rejected because objective evidence is

lacking to relate the symptoms to the workplace exposure. Many claims are rejected because the symptoms have resolved by the time treatment is obtained; there is no objective evidence of injury; or, exposure cannot be confirmed or documented. A rejected status prevents the worker from re-opening a claim based on original symptoms. Initial medical visits are usually paid.

Pending: Additional information is being collected on the claim before a determination can be made.

Kept On Salary: The employer elects to pay the claimant's salary instead of L&I paying time loss payments while the employee is recovering from an injury or illness.

In 1998, L&I paid out a total of \$138,317.39 for pesticide related claims.

Washington Poison Center

In 1998 the Washington Poison Center (WPC) received 134,605 calls. Of these, 3,002 were pesticide related calls and account for two percent of total calls received statewide by WPC (Table 6).

and 1 indirect. The majority of these cases had mild or no symptoms 105 (76%), had moderate symptoms 27 (20%), and had severe symptoms 6 (4%). As in previous years, the majority (94%) of pesticide related calls to WPC involved accidental exposure.

Forty-two percent of the calls to WPC involved children less than six years of age. Table 7 illustrates WPC calls by pesticide type for the different age groups. This distribution is consistent with prior years.

Table 6 WPC Comparison with Prior Years

Pesticide	1990	1991	1992	1993	1994	1995	1996	1997	1998
Fungicide	86	141	124	117	96	104	120	88	72
Herbicide	650	608	637	573	512	531	441	482	485
Insecticide	3,633	3,090	3,460	3,158	2,040	2,173	1,992	2,103	1,886
Moth Repellent	180	187	158	120	68	89	66	77	65
Rodenticide	682	655	664	676	473	478	473	477	478
Total	5,231	4,681	5,043	4,644	3,189	3,375	3,092	3,227	3,002
% of Total Calls to WPC	4.1%	3.7%	3.9%	3.09%	2%	2%	2%	2%	2%

No significant changes were observed from previous years. In Washington State pesticide poisonings are a reportable condition (WAC 246-100-217), and health care providers can report to DOH or through the WPC. All calls from health care providers are forwarded to DOH for investigation along with calls referred to a health care provider, or if a health care provider required case management assistance. In 1998, 138 referrals from WPC were investigated by DOH because of clinical signs and symptoms of pesticide illness. DOH classified these cases: 13 definite, 26 probable, 31 possible, 19 unlikely, 18 unrelated, 22 unknown, 8 asymptomatic (pesticide exposure was confirmed but the individual exhibited no symptoms)

Insecticides continued to be the type of pesticide most frequently involved in calls to WPC (63%).

Table 7 1998 WPC Calls by Pesticide Type and Age

Pesticide Type	Less than 6 years old	6-19 years old	>19 years old	Total Human Exposure Calls
Fungicides	13	6	51	72
Herbicides	131	59	299	501-
Insecticides	668	270	891	1886
Moth	36	6	21	65
Repellents				
Rodenticides	381	30	61	478
Total*	1229	371	1323	3002

* Age was not reported on 79 calls.